Acknowledgments

Funding for this document was provided by the U.S. Department of Transportation Federal Highway Administration and Federal Transit Administration, the Tennessee Department of Transportation, and local government members of the Metropolitan Planning Organization. This plan was developed on behalf of the Nashville Area MPO Transportation Policy Board.

Non-Discrimination Policy

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Complaints should be directed to Laylah Smith, Title VI Coordinator, 220 Athens Way, Suite 200, Nashville, TN 37228, phone number 615-862-8863.

Limited English Proficiency

Individuals needing assistance with translation services may contact Avaza Language Services Corporation at 615-534-3405 or 800-482-8282, 24 hours a day and 7 days a week.
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1 About this Document
Describes the purpose and goals of this document and provides an overview of the Greater Nashville Regional Council.

2 Federal Requirements and Guidance

3 MPO CMP Steps and Process
Description of the steps and highlights of the activities associated with the Nashville area CMP.

4 Action Plan for an Enhanced CMP
Preview of proposed actions to improve the CMP in coordination with state and federal partners.
1 About this Document

Describes the purpose and goals of this document and provides an overview of the transportation planning context.

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Introduction
About the Greater Nashville Regional Council
Metropolitan Planning Requirements
TN and GNRC Transportation Planning Areas
Nashville Area Planning Process
About this Document

Introduction
This document serves to provide a summary of the federally-required “Congestion Management Process” carried-out by the Nashville Area MPO as part of its short- and long-range planning activities.

This includes an overview of the transportation planning process across Middle Tennessee, a review of federal requirements and guidance related to the CMP, and highlights from the CMP process carried out by the MPO.

The document concludes with a list of anticipated enhancements to the CMP to further integrate congestion management into the regional transportation planning activities of the greater Nashville area.

Key Audiences for this Publication

- State and Federal Transportation partners responsible for ensuring compliance with federal regulations;
- Members of the general public interested in how the region is incorporating issues of traffic congestion into the transportation planning process;
- Stakeholders interested in learning more about the data and maps used to analyze traffic congestion.
About the GNRC

State Development District and Regional Council of Governments

GNRC was established in 1965 by the Tennessee General Assembly* as a regional planning and economic development to assist local communities and state agencies in the development of plans and programs that guide growth and development in the most desirable, efficient, and cost-effective manner, while ensuring the continued long-term livability of the region.

The agency is owned by and operated on behalf of its local government membership and is governed by a Council of 65 mayors and county executives, 2 state legislators, and 26 citizens appointed to represent social equity and economic development interests.

GNRC employs an 80-member staff comprised of planners, policy advisors, researchers, social workers, and administrators.

*Tennessee Development District Act of 1965 served as the initial enabling legislation. Subsequent legislation has further empowered GNRC to carry out regional planning activities.

TCA § 13-14-101 et seq., TCA § 64-7-101 et seq.
GNRC Programs and Services

Programs and Services

The GNRC administers a variety of state and federal grants programs on behalf of local governments and offers economic and community development services, policy and planning assistance, and aging and disability counseling to its member communities.

Designated to administer the Nashville Area Metropolitan Planning Organization (MPO) Program

On October 1, 2017, the GNRC became responsible the staffing and administrative functions of the Nashville Area MPO in accordance with a Transportation Planning and Policy Agreement.

That agreement designates the GNRC as the MPO’s fiduciary, a responsibility previously held by the Metropolitan Planning Commission (MPC) of Nashville-Davidson County.

Find out more at GNRC.org

Regional Transportation Plan in partnership with the U.S. Dept of Transportation and TN Dept. of Transportation.

Comprehensive Economic Development Strategy in partnership with the U.S. Dept of Commerce and TN Dept of Economic and Community Development.

Area Plan on Aging and Disability in partnership with the U.S. Dept of Health and Human Services and the TN Commission on Aging and Disability.

Regional Tourism coordination in partnership with the TN Dept of Tourist Development.

Community Development grant administration in partnership with the TN Housing Development Agency and the TN Dept of Economic and Community Development, and the U.S. Dept. of Agriculture.
Empowering Local Decision-Making for Federal Transportation Programs

While the earliest beginnings of urban transportation planning go back to the post-World War II years, the federal requirement for urban transportation planning emerged during the early 1960’s. The Federal-Aid Highway Act of 1962 created the federal requirement for urban transportation planning largely in response to the construction of the Interstate Highway System and the planning of routes through and around urban areas.

The Act required, as a condition attached to federal transportation financial assistance, that transportation projects in urbanized areas of 50,000 or more in population be based on a continuing, comprehensive, urban transportation planning process undertaken cooperatively by the states and local governments — the birth of the so-called 3C, “continuing, comprehensive and cooperative planning process.

The Intermodal Surface Transportation Equity Act (ISTEA) of 1991 strengthened the metropolitan planning process, enhanced the role of local elected officials, required stakeholder involvement, and encouraged movement away from modal parochialism toward integrated, modally mixed strategies for greater system efficiency, mobility and access.
Highlights of the Congestion Management Process for the Nashville Area MPO

Since the 1960s, the federal government has required that metropolitan areas undertake a continuing, comprehensive, and cooperative planning process. Legislation requires that all modes of surface transportation be considered during the planning process including private automobiles, public transit, walking and bicycling, as well as movements of people and goods.

**Federal Requirements**

Since the 1960s, the federal government has required that metropolitan areas undertake a continuing, comprehensive, and cooperative planning process. Legislation requires that all modes of surface transportation be considered during the planning process including private automobiles, public transit, walking and bicycling, as well as movements of people and goods.

**FAST Act**

In 2015, the U.S. Congress passed and the President signed into law the transportation act entitled, Fixing America’s Surface Transportation Act (FAST Act). This federal legislation defines ten specific planning factors to be considered when developing transportation plans and programs in a metropolitan area to ensure consistency with national goals and objectives.

1. Support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity, and efficiency.
2. Increase the safety of the transportation system for motorized and non-motorized users.
3. Increase the security of the transportation system for motorized and non-motorized users.
4. Increase the accessibility and mobility options available to people and for freight.
5. Protect and enhance the environment, promote energy conservation, improve quality of life, and promote consistency between transportation improvements and State and local planned growth and economic development patterns.
6. Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight.
7. Promote efficient system management and operation.
8. Emphasize the preservation of the existing transportation system.
9. Improve the resiliency and reliability of the transportation system and reduce or mitigate storm water impacts of surface transportation.
10. Enhance travel and tourism.
TN Transportation Planning Areas

**Regional Planning Organizations**

Federal law requires states to consult and coordinate with local officials in the development of transportation plans and programs. In Tennessee, TDOT works with two types of federally-recognized regional planning organizations which serve as forums for cooperative planning and decision-making.

**Metropolitan Planning Organizations (MPO)**

MPOs serve as the lead planning agency for urban areas of the state with 50,000 or more people and are empowered to make decisions about how federal transportation funds will be programmed on transportation improvements within their respective “metropolitan planning areas.” MPOs are required to produce a long-range Regional Transportation Plan, a short-range Transportation Improvement Program, and Unified Planning Work Program.

**Rural Planning Organizations (RPO)**

RPOs serve a similar function as MPOs for the rural areas of the state. The purpose of an RPO is to involve local officials in multimodal transportation planning, through a structured process, to ensure quality, competence, and fairness in the transportation decision-making process. RPOs consider multimodal transportation needs on a local and regional basis, review long-term needs as well as short-term funding priorities, and make recommendations to TDOT. RPOs are advisory in nature and lack the programming authority of MPOs.

Find out more at TN.gov/tdot/long-range-planning-home
<table>
<thead>
<tr>
<th><strong>GNRC Area Planning Organizations</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Nashville Area Metropolitan Planning Organization</strong></td>
</tr>
<tr>
<td>The Nashville Area MPO is the federally-designated regional planning organization for Davidson, Maury, Robertson, Rutherford, Sumner, Williamson, and Wilson counties.</td>
</tr>
<tr>
<td><em>Having an urbanized area population of more than 200,000 people, the MPO is designated as a Transportation Management Area, or TMA. The designation ensures a mandatory sub-allocation of federal transportation funds to the MPO, but also comes with additional metropolitan planning requirements. TMAs must be jointly certified by the Federal Highway Administration and Federal Transit Administration no less than every four years.</em></td>
</tr>
</tbody>
</table>

| **Clarksville Urbanized Area Metropolitan Planning Organization** |
| The Clarksville-Urbanized Area MPO is the federally-designated regional planning organization for Montgomery County, Tennessee and the portion of Christian County, Kentucky including and adjacent to the U.S. Census Clarksville Urbanized Area. |

| **Middle Tennessee Rural Planning Organization** |
| The Middle Tennessee Rural Planning Organization coordinates regional transportation planning for Stewart, Houston, Humphreys, Dickson, and Cheatham counties. |
| *Trousdale County, a county located within GNRC’s development district area, was a member of the Middle Tennessee RPO until it transitioned to the Dale Hollow RPO in 2017. The Dale Hollow RPO is staffed by the Upper Cumberland Development District.* |

<table>
<thead>
<tr>
<th><strong>Staffing and Support</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>GNRC.org</strong></td>
</tr>
<tr>
<td>Staffing and administrative support is provided by the Greater Nashville Regional Council.</td>
</tr>
<tr>
<td><strong>CUAMPO.com</strong></td>
</tr>
<tr>
<td>Staffing and administrative support is provided by the Clarksville/Montgomery County Regional Planning Commission.</td>
</tr>
<tr>
<td><strong>MCHRA.com</strong></td>
</tr>
<tr>
<td>Staffing and administrative support is provided by the Mid-Cumberland Human Resource Agency.</td>
</tr>
</tbody>
</table>
Nashville Area Planning Process

Primary Forum for Transportation Issues
The Nashville Area MPO Transportation Policy Board serves as the primary forum for regional transportation issues and leads in the development of the area’s long-range transportation plan and short-range transportation improvement program. A complete overview of the process and organizational structure for the planning program is described in the “Transportation Planning Prospectus” available at GNRC.org.

Guided by Four Key Principles
Regional transportation planning is guided by four principles which offer a framework for transportation planning and decisions.

- **Livability**: Enhance quality of life by prioritizing initiatives that increase opportunities for housing, learning, employment, recreation, and civic involvement while maintaining affordability.
- **Sustainability**: Encourage growth and prosperity without sacrificing the health, natural environment, historical and cultural assets, or financial stability of this or future generations.
- **Prosperity**: Contribute to the region’s economic well-being by targeting solutions that attract talent, connect workforce with jobs, reduce the cost of doing business, and leverage additional investment.
- **Diversity**: Respect the multitude of backgrounds and the variety of perspectives of Middle Tennesseans by pursuing an array of strategies that are customized to local community needs and character.

Transportation Planning Prospectus
The Transportation Planning Prospectus provides a detailed overview of the process, partners, and products associated with the Nashville Area MPO.
Nashville Area Planning Process

Major Planning Products

Regional Transportation Plan (RTP)
The RTP is a long-range, 25-year multimodal strategy and fiscally-constrained capital improvement program developed to guide the investment of public funds to manage congestion, improve roadway safety, and keep transportation facilities in a state of good repair. The RTP is updated every four or five years and may be amended as needed.

Transportation Improvement Program (TIP)
The TIP is a short-term program of projects that identifies all regionally-significant and federally-funded transportation improvements and services in the planning area. The TIP includes scheduled improvements to area roadways and intersections, public transit, and bicycle and pedestrian facilities. All projects in the TIP must be consistent with the adopted RTP.

Unified Planning Work Program (UPWP)
The UPWP provides information about how transportation planning funds are being used to fulfill federal planning requirements. The document identifies staff and consultant resources and describes the planning activities and studies to be performed during the next year or two.
Nashville Area Planning Process

What’s in the 2040 Plan

Introduction and Plan Highlights
Describes the purpose of the plan, the Nashville Area MPO, federal requirements, and coordination with stakeholders and the public.

Regional Issues and Thinking
Identifies the issues currently framing transportation decisions, describes related planning efforts, and presents recent public opinions and attitudes towards transportation.

Trends and Forecasts
Provides population and employment projections, land development forecasts, and commodity forecasts used in freight planning.

Transportation System
Describes existing transportation infrastructure including roadways, bridges, intersections, public transit, and walking and bicycling facilities.

Conditions and Performance
Presents maps and statistical information to illustrate how transportation system performance is expected to change over the next 25 years based on the region’s continued growth and development.

Goals, Vision, and Strategies
Lays out regional goals and objectives, a long-term vision for a multi-modal transportation system, and describes the region’s transportation priorities.

Tools and Options
Provides an overview of the tools available for improving transportation and presents a menu of options for transit, access management, managed lanes and roadway safety, among others.

Scheduled Investments and Financial Plan
Presents the MPO’s formal revenue forecast, a summary of the cost of all identified transportation needs, an overview of the process to evaluate and select projects for available funding, a list of cost-feasible projects, and a discussion of additional investment options.

Monitoring Impacts
Describes how proposed transportation projects could potentially impact vulnerable populations and the natural environment along with a discussion of mitigation strategies, and presents a discussion of how the region should track its progress towards implementing the plan.

Technical Appendices
Provides documentation related to regional planning models, the MPO’s call-for-projects process, projects proposed on congested corridors, projects with potential social or environmental impacts, public comments documented during the development of the plan, and key acronyms commonly used in the transportation planning process.
Federal Requirements & Guidance


IN THIS SECTION
Federal CMP Requirements
Federal CMP Guiding Document
Steps in the MPO’s CMP
Federal CMP Requirements

Congestion Management Process

The federal requirement for a Congestion Management Process (CMP) originated with the passage of the Intermodal Surface Transportation Efficiency Act (ISTEA) legislation in 1991, and was carried forward unchanged in its successor, the Transportation Equity Act for the 21st Century (TEA-21). With the passage of SAFETEA-LU in 2005, the Congestion Management System requirement was changed to a Congestion Management Process. Much of the language in the federal regulations remained the same between a CMS and a CMP, however, as the name suggests, there is more emphasis on making congestion management an ongoing process.

SAFETEA-LU, and its successors MAP-21 and the FAST Act, strengthen the ties between a CMP and the long-range transportation plan, stating that the regulations reflect the goal that the CMP be an integral part of developing a long range transportation plan and TIP for MPOs. The primary purpose of the CMP is to provide for a more informed decision-making process that can be used to make the most effective use of limited resources to address congestion problems.

Title 23 of the United States Code of Federal Regulations Part 450 Section 320 (23 CFR 450.320) describes the requirements of the federally-mandated CMP for metropolitan planning areas of more than 200,000 people. The CMP, as defined in federal regulation, is intended to serve as a systematic process that provides for safe and effective integrated management and operation of the multimodal transportation system.

A CMP is required in metropolitan areas with population exceeding 200,000, known as Transportation Management Areas (TMAs). Federal requirements state that in all TMAs, the CMP shall be developed and implemented as an integrated part of the metropolitan transportation planning process.
In April 2011, the Federal Highway Administration (FHWA) of the U.S. Department of Transportation published a report entitled “Congestion Management Process: A Guidebook,” which includes a sound description of the federal intent of the CMP requirements and the flexibility afforded MPOs in meeting those requirements.

A CMP is required in metropolitan areas with population exceeding 200,000, known as Transportation Management Areas (TMAs). Federal requirements state that in all TMAs, the CMP shall be developed and implemented as an integrated part of the metropolitan transportation planning process.”

“Although a CMP is required in every TMA, federal regulations are not prescriptive regarding the methods and approaches that must be used to implement a CMP.

This flexibility has been provided in recognition that different metropolitan areas may face different conditions regarding traffic congestion and may have different visions of how to deal with congestion.”
Since 2010, the CMP for the Nashville Area MPO has been fully integrated into the regional transportation planning process. Meaning, the components of the CMP are carried-out through the development of the core MPO products including the Regional Transportation Plan (RTP), the Transportation Improvement Process (TIP), and the Unified Planning Work Program (UPWP).

Each of these are produced with “congestion management” as a core strategy and rely on information and data that describe current and future traffic congestion and the benefit of various strategies aimed at mitigating and managing the impacts of that congestion.

The following sections provide a summary of how the MPO approaches each of the CMP components identified in the federal guidance.

*Graphic courtesy of FHWA*
MPO CMP Steps and Process

Highlights of the steps and process used in the MPO’s Congestion Management Process.

IN THIS SECTION
Step 1. Set Regional Objectives
Step 2. Define CMP Network
Step 3. Establish Performance Measures
Step 4. Monitor System Performance
Step 5. Analyze Congestion and Needs
Step 6. Identify and Assess Strategies
Step 7. Program and Implement Strategies
Step 8. Evaluate Effectiveness
Step 1. Set Regional Objectives

Establishing Goals and Objectives
Prepared by the Nashville Area MPO on behalf of its member jurisdictions, the Regional Transportation Plan (RTP), titled *Middle Tennessee Connected*, spans the next quarter century and represents the collective transportation goals of city and county governments, transit agencies, and the Tennessee Department of Transportation (TDOT). Its purpose is to identify how those partners intend to direct state and federal grants to projects that improve mobility across Davidson, Maury, Robertson, Rutherford, Sumner, Williamson, and Wilson counties.

The plan rests on the four guiding principles which recognize that improving regional mobility is a key strategy in achieving other community goals and objectives.

Guiding Principles

*Livability*
Enhance quality-of-life by prioritizing initiatives that increase opportunities for housing, learning, employment, recreation, and civic involvement while maintaining affordability.

*Prosperity*
Contribute to the region’s economic well-being by targeting solutions that attract talent, connect workforce with jobs, and reduce the cost of doing business and leverage additional investment.

*Sustainability*
Support growth and prosperity without sacrificing health, the natural environment, historical and cultural assets, or financial stability of this or future generations.

*Diversity*
Respect the multitude of backgrounds and variety of perspectives of Middle Tennesseans by pursuing an array of strategies that are customized to local community needs and character.
Highlights of the Congestion Management Process for the Nashville Area MPO

Regional goals and objectives are identified as part of the development of the Regional Transportation Plan (RTP) and are crafted to address local public and stakeholder concerns and expectations, as well as state and federal requirements and expectations for the use of transportation dollars generated by fuel taxes levied by the Tennessee General Assembly and the U.S. Congress.

The most recently adopted RTP provided an opportunity to identify and document community and regional goals and objectives for transportation decisions and policy through the year 2040. Working through a comprehensive, continuing and cooperative effort with the Federal Highway Administration, Federal Transit Administration, Tennessee Department of Transportation, local transit operators, the public, and other interested parties, the MPO process identified a set of short-, mid-, and long-term projects that address the anticipated needs within the region as embodied by a set of guiding principles, regional goals, and major objectives developed through extensive public and stakeholder involvement; many of which are reflective of efforts to mitigate and manage the negative impacts of traffic congestion.

Planning objectives, which include congestion management, are developed based on a combination of inputs including 1) federal planning factors, 2) review of local policies/plans, 3) public and stakeholder input through surveys and workshops, 4) collaboration with MPO members and partners through the Policy Board and committee structure.

The specific measures/definition of congestion are developed based on a review of best practices in Tennessee and across the nation, input from planning and engineering consultants employed to carry out research and studies, and through consultation with members of the MPO’s Technical Coordinating Committee.

Step 1. Set Regional Objectives

Establishing Goals and Objectives
Step 1. Set Regional Objectives

Goal 1. Maintain a Safe and Reliable Transportation System for People and Goods

Objectives
• Continue with a “fix-it-first” mentality to keep existing infrastructure in a state of good repair.
• Reduce the number and severity of crashes by designing roadways to accommodate all users.
• Incorporate information technologies to improve traffic operations and help optimize traveler decisions.
• Manage the negative impact of traffic congestion by providing alternatives to driving.
• Designate and implement a regional freight network to efficiently move goods and minimize negative impacts on local communities.

Goal 2. Help Local Communities Grow in a Healthy and Sustainable Way

Objectives
• Align transportation decisions with economic development initiatives, land use planning, and open space conservation efforts.
• Integrate healthy community design strategies and promote active transportation to improve the public health outcomes of the built environment.
• Encourage the deployment of context-sensitive solutions to ensure that community values are not sacrificed for a mobility improvement.
• Incorporate the arts and creative placemaking into planning and public works projects to foster innovative solutions and to enhance the sense of place and belonging.
• Pursue solutions that promote social equity and contain costs for transportation and housing.
Step 1. Set Regional Objectives

Goal 3. Enhance Economic Competitiveness by Improving Private Sector Performance

Objectives
- Recognize major shifts in demographics and market preferences for transportation and housing and respond with solutions that keep Middle Tennessee an attractive place to live and do business.
- Improve the connectivity between workforce and jobs by offering a range of options to manage commuting distances and travel times.
- Improve mobility within and between centers of commerce across the region by providing a diversified transportation system, rather than relying solely on roadway capacity.
- Keep the region connected to national and global markets by improving travel times on US Interstates, upgrading intermodal connections to water, air, and rail freight systems, and by ensuring Middle Tennessee is included in plans for national high speed passenger rail.

Goal 4. Spend Public Funds Wisely by Ensuring a Return on Investment

Objectives
- Increase public participation in the planning process to help identify the most significant problems.
- Foster interdisciplinary collaboration to prioritize the most effective solutions.
- Evaluate the full costs and benefits of public investment in infrastructure.
- Strive for quality over quantity by implementing all elements of priority projects to maximize value.
- Consider public-private partnerships to encourage innovative approaches to project design and delivery.
- Accelerate project delivery schedules by involving the public early and often, minimizing bureaucratic delay, and ensuring that funding is available to implement projects once designed.
- Monitor and track the performance of public investments to demonstrate accountability.
- Find ways to bridge the gap between revenue shortfalls and the growing cost of transportation needs.
Step 2. Define CMP Network

Definition of the CMP Network

The CMP network for the Nashville Area MPO mirrors that used to determine federal-aid eligibility for grants provided through the Federal Highway Administration and Federal Transit Administration. There are more than 12,000 linear miles of roadways throughout the MPO planning area. That is about the same distance one would cover by driving from Nashville to New York to California and back, twice. Of that, nearly 2,500 lane miles are eligible for federal funding made available through the MPO and TDOT. The federal-aid system includes roadways classified as major collectors, arterials, and freeways. Some exceptions are made to allow federal funds to be used for improvements to bridges on local roads, or projects that improve the safety of local roadways for the non-motorized modes of transportation (e.g., sidewalks, bicycle lanes, etc.).

Centerline Mileage by County and Functional Classification

<table>
<thead>
<tr>
<th>Functional Class</th>
<th>MPO</th>
<th>Davidson</th>
<th>Maury</th>
<th>Robertson</th>
<th>Rutherford</th>
<th>Sumner</th>
<th>Williamson</th>
<th>Wilson</th>
<th>TN</th>
<th>MPO/TN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interstates</td>
<td>226</td>
<td>89</td>
<td>18</td>
<td>28</td>
<td>33</td>
<td>6</td>
<td>24</td>
<td>27</td>
<td>1,104</td>
<td>20%</td>
</tr>
<tr>
<td>Other Freeways</td>
<td>60</td>
<td>29</td>
<td>9</td>
<td>-</td>
<td>7</td>
<td>13</td>
<td>0</td>
<td>2</td>
<td>159</td>
<td>38%</td>
</tr>
<tr>
<td>Principal Arterials</td>
<td>533</td>
<td>135</td>
<td>66</td>
<td>19</td>
<td>90</td>
<td>84</td>
<td>85</td>
<td>53</td>
<td>3,488</td>
<td>15%</td>
</tr>
<tr>
<td>Minor Arterials</td>
<td>806</td>
<td>291</td>
<td>72</td>
<td>75</td>
<td>120</td>
<td>80</td>
<td>89</td>
<td>79</td>
<td>5,698</td>
<td>14%</td>
</tr>
<tr>
<td>Major Collectors</td>
<td>949</td>
<td>168</td>
<td>105</td>
<td>92</td>
<td>177</td>
<td>149</td>
<td>131</td>
<td>127</td>
<td>7,327</td>
<td>13%</td>
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<tr>
<td>Minor Collectors</td>
<td>982</td>
<td>58</td>
<td>200</td>
<td>124</td>
<td>115</td>
<td>133</td>
<td>150</td>
<td>201</td>
<td>10,019</td>
<td>10%</td>
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<tr>
<td>Local Roads</td>
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<td>2,280</td>
<td>912</td>
<td>800</td>
<td>1,496</td>
<td>1,212</td>
<td>1,266</td>
<td>894</td>
<td>66,939</td>
<td>13%</td>
</tr>
<tr>
<td><strong>Total All Roads</strong></td>
<td><strong>12,416</strong></td>
<td><strong>3,049</strong></td>
<td><strong>1,383</strong></td>
<td><strong>1,137</strong></td>
<td><strong>2,039</strong></td>
<td><strong>1,677</strong></td>
<td><strong>1,747</strong></td>
<td><strong>1,383</strong></td>
<td><strong>94,735</strong></td>
<td><strong>13%</strong></td>
</tr>
<tr>
<td>Federal-Aid System</td>
<td>2,574</td>
<td>711</td>
<td>270</td>
<td>214</td>
<td>428</td>
<td>332</td>
<td>330</td>
<td>288</td>
<td>17,777</td>
<td>14%</td>
</tr>
</tbody>
</table>

Source: Tennessee Department of Transportation E-TRIMS System (2014)
Step 2. Define CMP Network

While centerline mileage is the way most people think about roadway distance, TDOT and local government agencies that build or maintain the system tend to measure distances in terms of lane miles. This method provides a better sense of the amount of roadways across the network. Lane miles are calculated by multiplying the centerline distance by the number of travel lanes. For instance, a one-mile stretch of four-lane highway has a lane-mile distance of four miles. When using that calculation, the MPO area has more than 26,000 lanes miles of roadways across the region. If one were to stretch those lanes out in a straight line, there would be enough pavement to circle the entire globe at the equator, or to get 10 percent of the way to the moon. The following table provides roadway lane miles for each county by functional classification.

Total Lane Miles by County and Functional Classification

<table>
<thead>
<tr>
<th>Functional Class</th>
<th>MPO</th>
<th>Davidson</th>
<th>Maury</th>
<th>Robertson</th>
<th>Rutherford</th>
<th>Sumner</th>
<th>Williamson</th>
<th>Wilson</th>
<th>TN</th>
<th>MPO/TN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interstates</td>
<td>1,297</td>
<td>582</td>
<td>71</td>
<td>116</td>
<td>207</td>
<td>25</td>
<td>147</td>
<td>149</td>
<td>5,196</td>
<td>25%</td>
</tr>
<tr>
<td>Other Freeways</td>
<td>284</td>
<td>157</td>
<td>37</td>
<td>-</td>
<td>32</td>
<td>51</td>
<td>0</td>
<td>7</td>
<td>722</td>
<td>39%</td>
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<tr>
<td>Principal Arterials</td>
<td>1,817</td>
<td>522</td>
<td>205</td>
<td>61</td>
<td>332</td>
<td>252</td>
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<td>171</td>
<td>12,070</td>
<td>15%</td>
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<tr>
<td>Minor Arterials</td>
<td>2,019</td>
<td>799</td>
<td>164</td>
<td>163</td>
<td>330</td>
<td>169</td>
<td>211</td>
<td>183</td>
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</tr>
<tr>
<td>Major Collectors</td>
<td>1,964</td>
<td>357</td>
<td>210</td>
<td>185</td>
<td>368</td>
<td>303</td>
<td>278</td>
<td>265</td>
<td>15,013</td>
<td>13%</td>
</tr>
<tr>
<td>Minor Collectors</td>
<td>1,961</td>
<td>117</td>
<td>401</td>
<td>248</td>
<td>230</td>
<td>266</td>
<td>302</td>
<td>398</td>
<td>19,880</td>
<td>10%</td>
</tr>
<tr>
<td>Local Roads</td>
<td>17,266</td>
<td>4,597</td>
<td>1,765</td>
<td>1,445</td>
<td>2,939</td>
<td>2,352</td>
<td>2,532</td>
<td>1,637</td>
<td>122,174</td>
<td>14%</td>
</tr>
<tr>
<td><strong>Total All Roads</strong></td>
<td><strong>26,610</strong></td>
<td><strong>7,131</strong></td>
<td><strong>2,853</strong></td>
<td><strong>2,217</strong></td>
<td><strong>4,439</strong></td>
<td><strong>3,416</strong></td>
<td><strong>3,744</strong></td>
<td><strong>2,810</strong></td>
<td><strong>188,900</strong></td>
<td><strong>14%</strong></td>
</tr>
<tr>
<td>Federal-Aid System</td>
<td>7,382</td>
<td>2,417</td>
<td>687</td>
<td>524</td>
<td>1,270</td>
<td>799</td>
<td>910</td>
<td>775</td>
<td>46,846</td>
<td>16%</td>
</tr>
</tbody>
</table>

Source: Tennessee Department of Transportation E-TRIMS System (2014)
Step 2. Define CMP Network

Maps of the CMP Network

The following map series presents information about major roadways across the MPO planning area including the federal functional classification, system type, and posted speed limits and number of lanes.
Step 2. Define CMP Network

CMP Network by Posted Network

CMP Network by Travel Lanes

- Above 65 mph
- 60 or 65 mph
- 50 or 55 mph
- 45 mph or less

- 10 or more lanes
- 8 or 9 lanes
- 6 or 7 lanes
- 4 or more lanes
Step 3. Establish Performance Measures

Performance Measurement

Performance measurement is an important part of transportation planning, not only because it enriches the decision-making process, but also because it provides a measure of accountability to the public by ensuring that planned investments achieve community-based goals. Such measures help inform the region’s understanding of the conditions of existing infrastructure and anticipate the future performance of the transportation system, or its impact on quality of life.

Chapter 5 of the 2040 RTP presents an overview of the key measures used as part of the MPO planning process, including the CMP. It is important to note that MAP-21 and the FAST Act, the legal framework for federal transportation regulations, calls on the U.S. DOT to establish requirements for performance-based planning that will ultimately affect the data collection and reporting responsibilities of state DOTs and MPOs across the country.
Step 3. Establish Performance Measures

Regional & CMP District Performance Measures

The following is an abbreviated list of regional-scale measures that were used to carry out a CMP for the development of the RTP. Each are defined below and are based on travel behavior on an average weekday across major roadways and transit systems in the seven-county area. The measures are produced at the regional and CMP district level.

<table>
<thead>
<tr>
<th>Regional and CMP District Measures (subset)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of People Residing within the Region</td>
</tr>
<tr>
<td>Number of Occupied Jobs across the Region</td>
</tr>
<tr>
<td>Total Daily Trips on Major Roadways per Day</td>
</tr>
<tr>
<td>One-Way Trips per Capita each Day</td>
</tr>
<tr>
<td>Total Vehicle Miles Traveled per Day</td>
</tr>
<tr>
<td>Miles Traveled per Capita each Day</td>
</tr>
<tr>
<td>Time Spent Traveling per Capita each Day</td>
</tr>
<tr>
<td>Average Speed across all Major Roadways</td>
</tr>
<tr>
<td>Percent of Miles Traveled on Congested Route</td>
</tr>
<tr>
<td>Percent of Freight Truck Travel on Congested Routes</td>
</tr>
<tr>
<td>Daily Transit Ridership</td>
</tr>
</tbody>
</table>

Route Level Performance Measures

- Roadway volumes and level of service
- Vehicular travel speeds along corridors
- Vehicular travel times between origins and destinations
- Bicycle and pedestrian level of service and
- Bicycle and pedestrian latent demand
- Transit route headways and ridership
- Roadway safety and crash data
- Density and spacing of roadway intersections
- Heavy and commercial truck volumes
Step 3. Establish Performance Measures

National & Peer Benchmarks

The MPO incorporates national benchmarks and peer comparisons into its performance measurement. This provides for a more complete understanding and a higher degree of appreciation for Middle Tennessee’s challenges and opportunities. Given that transportation, and in particular traffic congestion, is such a prominent national issue, there are numerous third party organizations that use publicly available data to rank and track progress of the nation’s metropolitan areas.

The most popular among these is the Texas Transportation Institute (TTI), a national transportation research center based out of Texas A&M University. TTI releases an Urban Mobility Report which includes rankings of America’s urbanized areas on metrics related to traffic congestion. The last such report was released in 2015 and shows the following measures and rankings for the year 2014 for the Nashville Urbanized Area.

- U.S. Population Ranking: 38th most populated
- Travel Time Index: 34th worst
- Annual Delay per Auto Commuter: 29th worst
- Cost of Congestion per Auto Commuter: 18th worst
Step 3. Establish Performance Measures

While most of these measures are pretty straightforward, the Travel Time Index is more complex, and is defined as the ratio of travel time during rush hour to the travel time during off-peak hours. For example, an index of 1.30 means that a trip that would normally take 20 minutes during off-peak, would take 26 minutes during rush hour.

With TTI focusing primarily on congestion-induced travel delays, there is a growing recognition that travel time, as a whole, is a truer measure of mobility. This measure is the full accounting of one’s time, regardless of whether attributed to congestion or by longer distances between destinations.

Many groups like Transportation for America and CEOs for Cities argue that automobile congestion in and of itself is not necessarily a valuable measure of mobility. Take for instance urban environments where traffic congestion may be severe, but trip distances are very short or can be made by another mode of transportation not subjected to that congestion. In those cases, delays caused by congestion are not as detrimental to overall mobility or accessibility. Conversely, longer distances between destinations make travelers extremely vulnerable to congestion and fuel prices. Increases in either of those variables can cost commuters dearly in terms of lost time or out-of-pocket expense.

To that end, CEOs for Cities published a report in 2010 that ranked metropolitan areas based on total regional average commute travel times. That ranking paints an even direr picture for Middle Tennessee, as it ranked the Nashville area as the worst commute in the nation when travel distance was combined with congestion delay as a measure of total commute burden.

[Image: INRIX Global Traffic Scorecard]

The INRIX 2016 Traffic Scorecard analyzed congestion in 1,064 cities, 240 in the U.S., across 38 countries. The visualization below shows the ranking of the top 100 U.S. cities by the number of peak hours the average commuter spent in congestion. It also includes the economic cost of congestion per driver and the total cost per city in 2016. Los Angeles tops the list as the most congested city in the world, with traffic jams costing drivers $2.40 per day or $877 million city-wide.

For the complete INRIX 2016 Traffic Scorecard, visit inrix.com/scorecard
### Step 4. Monitor System Performance

#### Overview of the Process

The MPO monitors all facilities that are included in the MPO’s travel demand forecasting model which includes roadways classified as a major collector or higher functional classification.

While congestion is monitored or forecast for individual routes - either using third party data or MPO travel demand model output – the analysis of congestion as it relates to regional mobility is typically performed at an aggregate level, looking at the system or corridor level performance.

For monitoring present-day conditions, the MPO has previously conducted real-time travel data collection using GPS surveys of key routes across the region. This practice proved expensive and didn’t produce results in a timely manner. The emergence of third party datasets (e.g., INRIX, Waze, etc.) and the ability to observe traffic conditions through websites like Google Maps have essentially eliminated the need to conduct first-hand data collection.

The MPO takes the land use forecast (described in Section 3 of RTP) which identifies the likely locations that people will live and work in the future, feeds that information into the travel demand model which simulates the flow of traffic generated by the residential population, pass-through traffic, and commercial/freight activity. From that simulation, the MPO can determine the expected traffic patterns, vehicle volumes, and travel speeds for each segment of roadway. An analysis can be done for any number of scenarios including no-build scenarios and various build-scenarios.

#### Data Collection is Key

In recent years, the MPO has procured, obtained, or produced the following types of data in support of the CMP:

- Annual daily traffic counts along major roadways,
- Current travel speeds along major roadways,
- Future year traffic volumes and travel speeds,
- Roadway and sidewalk conditions,
- Transit route ridership and boarding and alighting counts,
- Roadway crash/incident data,
- Freight and heavy truck movements and forecasts,
- Information about business locations and number of employees,
- Public perceptions of traffic congestion and attitudes towards potential solutions (scientific polling),
- Household and personal-level usage of transit and employer commuter benefits (scientific polling/ household travel surveys),
- Cost of congestion data and peer comparison from third-party reports.
Step 4. Monitor System Performance

Publications and Reports

The MPO publishes two reports that shine a spotlight on traffic congestion trends across Middle Tennessee including the *State of Transportation in Middle Tennessee* report and the *Nashville Region’s Vital Signs*, the latter produced each year in partnership with the Nashville Area Chamber of Commerce. These report tracks Middle Tennessee against a select set of metro area peers that represent economic competitors or serve as models for different approaches to growth and development. Included in the report are key transportation indicators related to the availability (or supply) and usage (or demand) of roadways and transit, regional travel times, and regional traffic congestion trends.

The MPO’s website includes information about current and future levels of traffic congestion and information about the congestion management process, plans and programs to address congestion, and strategies for mitigation.
Step 4. Monitor System Performance

Existing Conditions and Trends

The following tables and graphics offer a glimpse into the visualizations produced to help partners see the current and anticipated performance and the transportation system for key measures.

- System Level Measures
- Regional Travel Times
- Travel Distances from Centers
- Roadway Volumes
- Roadway Level of Service
- Roadway Speeds
- Bicycle and Pedestrian Level of Service
## Step 4. Monitor System Performance

### System Level Measures

<table>
<thead>
<tr>
<th>Across the Seven-County Area, Average Weekday</th>
<th>2010</th>
<th>Change by 2040</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of People Residing within the Region</td>
<td>1.5M people</td>
<td>76% more</td>
</tr>
<tr>
<td>Number of Occupied Jobs across the Region</td>
<td>972K jobs</td>
<td>81% more</td>
</tr>
<tr>
<td>Total Daily Trips on Major Roadways per Day</td>
<td>5.9M trips</td>
<td>78% more</td>
</tr>
<tr>
<td>One-Way Trips per Capita each Day</td>
<td>3.98 trips</td>
<td>about the same</td>
</tr>
<tr>
<td>Total Vehicle Miles Traveled per Day</td>
<td>49M miles</td>
<td>86% more</td>
</tr>
<tr>
<td>Miles Traveled per Capita each Day</td>
<td>33.2 miles</td>
<td>6% fewer</td>
</tr>
<tr>
<td>Time Spent Traveling per Capita each Day</td>
<td>48 minutes</td>
<td>113% longer</td>
</tr>
<tr>
<td>Average Speed across all Major Roadways</td>
<td>47 mph</td>
<td>26% slower</td>
</tr>
<tr>
<td>Percent of Miles Traveled on Congested Route</td>
<td>15 percent</td>
<td>162% more</td>
</tr>
<tr>
<td>Percent of Freight Truck Travel on Congested Routes</td>
<td>23 percent</td>
<td>141% more</td>
</tr>
<tr>
<td>Daily Transit Ridership</td>
<td>33K rides</td>
<td>33% more</td>
</tr>
</tbody>
</table>
Regional Travel Times

Traffic congestion can have significant impacts to quality of life including longer travel times for commuters and freight. Based on growth and development trends, longer commutes between key destinations are expected between now and 2040. The table below compares travel times for the quickest routing between destinations for three separate time periods, 1) Google Maps routing for 11 p.m., present day; 2) Google Maps routing for present-day morning rush hour; 3) the MPO’s traffic model’s routing during morning rush hour in the year 2040.

<table>
<thead>
<tr>
<th>Average Weekday</th>
<th>Google Maps @ 11 PM</th>
<th>Present-Day Morning Rush Hour*</th>
<th>Morning Rush Hour Change by 2040*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Downtown Franklin to Nashville</td>
<td>28 minutes</td>
<td>39 minutes</td>
<td>13% longer</td>
</tr>
<tr>
<td>Downtown Franklin to Murfreesboro</td>
<td>45 minutes</td>
<td>47 minutes</td>
<td>22% longer</td>
</tr>
<tr>
<td>Downtown Gallatin to Nashville</td>
<td>40 minutes</td>
<td>58 minutes</td>
<td>38% longer</td>
</tr>
<tr>
<td>Downtown Lebanon to Gallatin</td>
<td>30 minutes</td>
<td>32 minutes</td>
<td>52% longer</td>
</tr>
<tr>
<td>Downtown Murfreesboro to Nashville</td>
<td>40 minutes</td>
<td>57 minutes</td>
<td>24% longer</td>
</tr>
<tr>
<td>Downtown Columbia to Cool Springs</td>
<td>40 minutes</td>
<td>45 minutes</td>
<td>42% longer</td>
</tr>
<tr>
<td>Mt. Juliet to Vanderbilt University</td>
<td>26 minutes</td>
<td>38 minutes</td>
<td>26% longer</td>
</tr>
<tr>
<td>Downtown Portland to Spring Hill</td>
<td>75 minutes</td>
<td>79 minutes</td>
<td>26% longer</td>
</tr>
</tbody>
</table>

Source: *MPO Travel Demand Model. Based on current transportation system. Morning Rush Hour is 7 to 9 A.M.
Step 4. Monitor System Performance

Travel Distances from Centers

The following maps illustrate the changes in travel distances one can expect to drive in 2015 and 2040 when traveling from downtown Nashville during the morning rush hour, 7 A.M to 9 A.M. The 2040 RTP includes additional maps depicting changes in travel distances, from 2015 to 2040, for travel from each of the seats of county government across the MPO planning area.
Step 4. Monitor System Performance

Vehicle Volumes on Major Roadways (2010 and 2040)
Step 4. Monitor System Performance

Roadway Level of Service, 2010 and 2040

Source: MPO Regional Travel Demand Model
Step 4. Monitor System Performance

Vehicle Volumes on Major Roadways, 2010 and 2040

Source: MPO Regional Travel Demand Model
Step 4. Monitor System Performance

Bicycle and Pedestrian Level of Service

Source: TDOT E-TRIMS, Nashville Area MPO Regional Bicycle and Pedestrian Study, 2015
Step 5. Analyze Congestion & Needs

Identifying and Analyzing Congestion

Transportation planners and engineers monitor two types of congestion, recurring and non-recurring. Recurring congestion results when traffic demand approaches or exceeds the available capacity of a facility as determined by the physical limitations of a roadway and/or the operation of the facility (e.g., signalization or other traffic control devices). Recurring congestion is somewhat reliably predictable based on analysis of growth in demand and the supply of roadway capacity. Non-recurring congestion, on the other hand, is much more difficult to predict — as it depends largely on factors beyond a transportation planner’s control including weather, driver behavior and/or impairment, incidents, and special events.

According to FHWA research, less than half of all congestion in the U.S. is considered recurring or caused by excessive demand, bottlenecks, or poor signal timing. That portion of congestion can be treated or managed through transportation improvements that add capacity to the network in the form of additional roadway lanes, transit service, sidewalks, and bicycle lanes or through more efficient traffic control measures (e.g., improved traffic signal timing).

The remaining congestion is considered non-recurring — or beyond the direct control of transportation planners or engineers. Still, DOTs and MPOs are seeking ways to minimize delays caused by bad weather, special events, work zones, or traffic incidents by employing more effective traffic incident techniques and targeting funding at improving the safety of high crash locations.

The MPO defines any segment of roadway as congested if it has either 1) a travel speed that is 30 percent slower at any time of day than expected during free flow conditions, or 2) a volume to capacity ratio of 1.0 or greater. The following map series, included as part of the 2040 RTP, presents a sampling of the visual representation of route level performance in 2010 and 2040.
Step 5. Analyze Congestion & Needs

Congested Routes, 2010 and 2040

Routes operating over capacity during peak hours

Routes operating at 70% or less of free flow speed during peak hours

The average amount of time we spend traveling is expected to **double by 2040**, despite a decrease in the total distance traveled per person.
Step 5. Analyze Congestion & Needs

Area Congestion by Level of Severity, 2010 and 2040
Step 5. Analyze Congestion & Needs

RTP Project Evaluation

The MPO developed a formal evaluation and scoring system to help determine which projects should be prioritized for the limited funding available from the federal government. The scoring system is based on both federally-defined planning guidance and local input and includes a comprehensive set of factors that were determined to provide the best approach, given the available data, to evaluate projects for their consistency with the MPO’s guiding principles, regional goals, and major objectives described earlier in this document. The following factors were considered in evaluating projects for funding.

- Congestion management,
- Multi-modal accommodations,
- Freight and goods movement,
- Safety and security,
- System preservation,
- Quality growth and sustainable development,
- Economic prosperity,
- Health and environment, and
- State and local support.

The RTP appendix includes a comprehensive list of MPO evaluation criteria, project scoring weights, and an example of a project information sheet which was compiled to show relevant data and information for each project being considered for funding.
Step 5. Analyze Congestion & Needs
Step 5. Analyze Congestion & Needs

Project by Project Analysis

The call-for-projects for the 2040 RTP identified more than 400 individual transportation projects derived from local plans of cities, counties, and transit agencies, as well as TDOT. For each project, MPO staff determined if the route was congested or anticipated to be congested, reviewed key indicators, and documented their analysis of how well the proposed improvement would help address levels of congestion.

Analyzing Congestion – Key Indicators

- Roadway volume to capacity
- Intensity of freight movement
- Travel speeds vs. expected free flow
- Intersection density
- Incidents and crash rates
- Project applicant evidence/supporting material
- Documented complaints by the public or stakeholders
Step 6. Identify and Assess Strategies

Regional and Corridor Studies to Assess Strategies

The development of the 2040 RTP began with the MPO working with its planning partners to conduct a series of studies to identify and assess strategies for improving elements of the transportation system and/or the relationship between transportation and land use, urban design, and economic development. Each contained a robust public involvement process that included a range of activities, from public meetings and workshops to web-based and telephone surveys. These efforts and others are documented on the MPO’s website at NashvilleMPO.org.

- I-40/81 Corridor Study
- I-24 Corridor Multi-Modal Study
- Regional Freight and Goods Movement Study
- Regional ITS Architecture
- Managed Lanes Briefing
- State Route 109 Access Management Study
- Southeast Area Transportation and Land Use Study
- Northeast Corridor Mobility Study
- Southeast Corridor Transit Alternatives Analysis
- Tri-County Transportation & Land Use Study
- Nashville MTA Master Plan

MPO planning activities are programmed in the Unified Planning Work Program.
Step 6. Identify and Assess Strategies

**Toolbox of Options**

The intent of the CMP regulations is to investigate mitigation strategies that focus on improving transportation operations and managing the existing system more efficiently, as well as reducing travel demand as a means to reduce congestion before resorting to new roadway construction or widening projects that serve only single occupant vehicles (SOV).

There are several options in the transportation planner’s “toolbox” that can be used to reduce congestion.

In addition, the MPO has programmed funds in the Unified Planning Work Program and Transportation Improvement Program to encourage the development and promotion of Transportation Demand Management strategies at employment sites across the region including ridesharing, telework, staggered commute times, and transit commuter discounts. MPO jurisdictions, transit agencies, and local non‐profits organizations carry out this work.

2040 RTP Chapter 7 Toolbox

- Public transit options,
- Complete streets considerations,
- Access management and network connectivity tools,
- Managed lanes concepts technology and traffic operations strategies,
- Safety and security improvements
Step 7. Program and Implement

**Investments Programmed in the RTP and TIP**

In February 2016, the MPO adopted the $8 billion+ 2040 RTP, built upon a three pronged vision – 1) implement the regional vision for mass transit, 2) create active and walkable communities, and 3) reinvest in strategic transportation corridors to improve the operations of existing roadways. Each of these is positioned to help manage congestion.

All projects included in the 2040 RTP that will be implemented with federal funding are required to be formally programmed into the region’s Transportation Improvement Program (TIP) prior to obligation and expenditure of funds.

This short-term programming requirement ensures that the state and MPO have accounted for recently authorized federal funding levels appropriated by Congress and provides additional opportunity for the public and interested stakeholders to have input on the projects that are to be implemented over the next few years.
Step 7. Program and Implement

- Expanded and Modernized Transit Options
  It is critical that the region place significant emphasis on improving public transit in the years to come. This will provide alternatives to congested roadways, and ensure Middle Tennessee remains a livable marketplace that can compete on a national and global scale.

- More Active and Walkable Communities
  People are demanding safer and more walkable streets. Investments in infrastructure for pedestrians and bicyclists will enhance local commerce, foster healthier lifestyles, and serve as the backbone for transit expansion.

- Reimagined Corridors with Integrated Technology
  Reinvestment in existing roadways will maximize the benefit of limited transportation dollars and ensure that infrastructure is not overextended beyond the region’s ability to maintain a state of good repair. Emphasis should be placed on bringing roadways to design standards and integrating technologies to improve traffic operations and real-time travel information.
Step 7. Program and Implement

Six Core Strategies of the RTP

1. Maintain the safety and reliability of the existing system;
2. Increase coordination between transportation decisions and economic and community development decisions;
3. Focus short- and mid-term investments on “complete streets” and the deployment of new technologies to improve roadway safety, traffic operations, and customer information;
4. Pursue a combination of projects, incentives, and regulations to reduce transportation costs for freight carriers, and minimize the impacts of heavy truck and rail operations on the urban core and surrounding communities;
5. Establish consensus to fund and implement projects of regional significance including multi-modal upgrades to key corridors and major reconstruction of the aging interstate loop around downtown Nashville; and
6. Engage the public in new and innovative ways, including creative placemaking, to enhance buy-in and minimize impacts of construction on neighborhoods.
Step 7. Program and Implement

$8.5 Billion
Based on current funding levels authorized by U.S. Congress, the Nashville area is expected to receive approximately $8.5 billion over the next 25 years from federal transportation grants that are distributed by formula to states and MPOs. This amount includes the required non-federal matching dollars. The figures below present MPO recommendations for how those dollars should be directed to projects through 2040.

$2.7 Billion
U.S. Interstate Improvements
New and improved interchanges, additional general purpose lanes, and designated lanes for carpools and transit where appropriate.

$3.2 Billion
Roadway Capacity Expansion
Roadway extensions and additional lanes on interstates, state routes, and other federal-aid streets, incorporating new sidewalks and bicycle lanes where appropriate.

$269 Million
Improvements to Reduce Vehicle Emissions
Diesel engine retrofits and the expansion of non-motorized modes and public transit to address air quality concerns.

$1.0 Billion
Roadway Reconstruction and Multi-Modal Upgrades
Non-capacity upgrades to existing roadways to improve traffic operations, incorporate drainage and streetscaping, and enhance safety for drivers, pedestrians, and cyclists.

$1.2 Billion
Regional Fixed-Guideway Transit Projects
Dedicated lanes for transit along regional corridors and within the urban core.

$916 Million
Local and Regional Transit Improvements
Preventative maintenance, vehicle acquisition and replacement, transit facilities, vanpool programs, and rural services.

$206 Million
Dedicated to Active Transportation Projects
Expanded access to safe walking and bicycling facilities.

$132 Million
Dedicated to Technology Upgrades
Deployment of new solutions to manage traffic and provide real-time travel information about parking and transportation options.

$396 Million
Dedicated to Safety Improvements
Intersection and roadway safety improvements as they arise over the next several years.

The 2040 RTP marks the first time the region has elected to dedicate a portion of its formula grant funding from the Federal Highway Administration to help engineer and construct fixed-guideway transit along major roadway corridors connecting Nashville to Franklin, Gallatin, and Murfreesboro. Those funds can be combined with local dedicated revenue to help leverage additional federal discretionary grants to build out the regional transit vision.
Step 7. Program and Implement

The Plan is Only the Start

The project selection criteria for the RTP and the MPO’s Transportation Improvement Program address the national goals of a CMP. The scoring system used provides a direct mechanism for CMP to be considered in the project selection process, which ultimately determines the projects that are to be implemented. Appendix B of the RTP provides the list of projects that propose improvements to congested corridors.

The plans adopted by the MPO represent one of the earliest stages of any major transportation project. In most cases, the RTP offers only a conceptual proposal and best estimate of costs for transportation projects, especially those identified for the mid- and long-term horizons of the plan.

The implementation of transportation projects can take several years. As a result, it is imperative that the CMP be an integral part of the process that is carried out on a continuous basis. The MPO work program is built upon this premise.
Step 8. Evaluate Effectiveness

Evaluating the effectiveness of previous investments and strategies is carried out through a multi-pronged approach.

Regional Studies
The transportation planning process relies heavily upon the information gathered and analyzed through planning studies. The MPO administers a variety of regional and corridor level studies, each with significant opportunities for the general public and interested parties to participate in the development of recommendations. Planning studies are identified each year in the adopted Unified Planning Work Program.

TDOT Plans and Studies
The TN Department of Transportation (TDOT) conducts a variety of studies that are used to evaluate the effectiveness of prior investments.

Opinion Surveys
The MPO conducts various telephone, mail, in-person, and web-based surveys to gather input from specific audiences or to measure general attitudes toward planning issues and concepts. While much of the survey research performed in support of planning studies is conducted with random-sampling to yield statistically-valid results, the MPO provides opportunities for anyone to share their opinions and attitudes about transportation strategies at NashvilleMPO.org.

Local Community Plans
Nearly every municipality and county government in Middle Tennessee has its own set of plans to help manage resources and to prepare for future growth. Those plans set land use policies and identify strategies to address needs for schools, parks, water and sewer, as well as transportation. Local transportation priorities are usually identified in the transportation element of local comprehensive plans, or as part of a separate local major thoroughfare plan. Each one of these local planning efforts provides substantial opportunities to learn about the effectiveness of solutions at the local level.
Step 8. Evaluate Effectiveness

A statistically valid survey was conducted in 2014 to collect information from Middle Tennesseans to help planners and policymakers evaluate the effectiveness of transportation policies and investments. A similar survey was conducted in 2009 which provided an opportunity to monitor trends in public perception.
Step 8. Evaluate Effectiveness

Of the problems identified by respondents, the lack of transit options and sidewalk connectivity were identified as the top priorities among those surveyed.

The construction of new roads and bicycle lanes were identified as the lowest priorities.

n = 1,100
Action Plan for an Enhanced CMP

A look at proposed improvements to the CMP for the Nashville Area MPO.

IN THIS SECTION
Action Plan for an Enhanced CMP
## Action Plan for an Enhanced CMP

<table>
<thead>
<tr>
<th>Proposed Action</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attend CMP workshop with state and federal Partners</td>
<td>• <strong>Completed in October 2018.</strong> GNRC staff attended a two-day workshop sponsored by FHWA to learn more about national best practices for CMP on October 22 and 23.</td>
</tr>
<tr>
<td>Publish a standalone document to profile the region’s Congestion Management Process</td>
<td>• <strong>Submitted in February 2019.</strong> GNRC produced a draft standalone document for review by FHWA on February 4.</td>
</tr>
<tr>
<td>Ensure continued adherence to CMP procedures for the duration of the 2040 RTP</td>
<td>• <strong>Ongoing through February 2021.</strong> GNRC will continue to monitor levels of congestion across the network; GNRC will continue to perform analysis of any new projects being considered for the 2040 RTP and corresponding TIPs.</td>
</tr>
</tbody>
</table>
| Consider enhancements to the CMP to provide additional focus on congestion management through the development of the 2045 RTP | • **Ongoing through February 2021.** GNRC is currently evaluating the following enhancements to the CMP for use in the 2045 RTP and corresponding TIPs.  
  • Full deployment of the MPO’s Activity Based Model in corridor studies and regional analysis;  
  • Further evaluation of congestion management strategies including managed lanes, congesting pricing, rapid transit, travel demand management strategies, and emerging smart mobility technologies.  
  • Improved integration of incident management and operations analysis into the long-range planning process;  
  • Future updates to the CMP documentation to ensure the process remains transparent and accessible to partners and the general public. |
| Coordinate with state and federal partners on the implementation of CMP improvements | • **Ongoing through February 2021.** GNRC will coordinate with state and federal partners during the scoping of the 2045 RTP development. |